Amendments to the Claims

1. (Currently amended) A planar fuel cell system comprising at least two fuel cells which are electrically connected in series in a plane via horizontally overlapping connecting lugs and ~~in each case on the anode side and on the cathode side comprise current collectors which are~~ comprise an anode current collector on the anode side and comprise a cathode current collector on the cathode side, the current collectors being electrically connected to the connecting lugs, and a polymer electrolyte membrane, wherein the current path is led around the polymer electrolyte membrane,

wherein the fuel cell system is designed with a ~~[printed]~~ printed circuit board technique and as a composite of a first, anode-side ~~[printed]~~ printed circuit board and a second, cathode-side ~~[printed]~~ printed circuit board, and the current collectors and connecting lugs are designed as strip conductors of these ~~[printed]~~ printed circuit boards.

2. (Currently amended) A fuel cell system according to claim 1, wherein the connecting lugs are located within the boundary of the ~~[printed]~~ printed circuit board composite.

3. (Previously presented) A fuel cell system according to claim 1, wherein the connecting lugs in their overlapping region in each case are connected by way of at least one perpendicular contacting element.

4. (Previously presented) A fuel cell system according to claim 3, wherein at least one perpendicular contacting element is a bore filled with an electrically conductive material.

5. (Currently amended) A fuel cell system according to claim ~~5~~ 4, wherein the electrically conductive material is solder or an electrically conductive adhesive.

6. (Previously presented) A fuel cell system according to claim 4, wherein the bore is metallised on its inner side.

7. (Previously presented) A fuel cell system according to claim 3, wherein at least one perpendicular contacting element is a rivet.

8. (Currently amended) A fuel cell system according to claim 1, wherein gas distribution structures are incorporated into the first, anode-side ~~[printed]~~ printed circuit board.

9. (Currently amended) A fuel cell system according to claim 1, wherein gas distribution structures are incorporated into the second, cathode-side ~~[printed]~~ printed circuit board.

10. (Currently amended) A fuel cell system according to claim 1, wherein air openings to the outside are incorporated into the second, cathode-side ~~[printed]~~ printed circuit board.

11. (Currently amended) A fuel cell system according to claim 1, wherein the fuel cells in each case have a reaction region which is incorporated into the first and second ~~[printed]~~ printed circuit ~~board~~ boards and which is circumscribed by a raised part of ~~[printed]~~ printed circuit board material and/or lacquer.

12. (Currently amended) A fuel cell system according to claim 1, wherein the reaction region contains a gas distribution structure and ~~a current collector~~ one of the anode or cathode current collectors, and a diffusion layer is provided which is deposited onto ~~the current collector~~ one of the anode or cathode current collectors in a flat manner.

13. (Previously presented) A fuel cell system according to claim 1, wherein the diffusion layer is designed as a plastic fabric provided with metallised segments.

14. (Currently amended) A fuel cell system according to claim 1, wherein the strip conductors and/or ~~the~~ outer contacts contained in the fuel cell system are coated with single-ply or multi-ply electrically conductive layers to avoid corrosion.

15. (Previously presented) A fuel cell system according to claim 1, wherein the polymer electrolyte membrane is designed as a segmented membrane electrode assembly (MEA).

16. (Currently amended) A fuel cell system according to claim 1, wherein on the surface of the ~~[printed]~~ printed circuit board composite it comprises an electronic circuit.

17. (Currently amended) A fuel cell system according to claim 1, wherein the connecting lugs ~~of the first and of the second [printed] circuit board are arranged on these in each case on the reaction region side~~ are arranged in each case on the reaction region side of the first and of the second printed circuit board and are electrically contacted in a permanent manner by way of a welding connection.

18. (Currently amended) A planar fuel cell system comprising at least two fuel cells which via strip conductors are electrically connected in series in a plane and which comprise current collectors electrically connected to the connection elements, and a polymer electrolyte membrane, wherein the current path is led around the polymer electrolyte membrane, wherein the fuel cell system is designed in a ~~[printed]~~ printed circuit board technique and as a composite of a first ~~[printed]~~ printed circuit board and a second ~~[printed]~~ printed circuit board, and the current collectors and connection elements are designed as strip conductors of these ~~[printed]~~ printed circuit boards, wherein the ~~[printed]~~ printed circuit boards in each case comprise alternating anode and cathode gas distribution structures and wherein in each case one adjacent anode current collector and cathode current collector is electrically connected by way of the connection element.

19. (Currently amended) A method for manufacturing a fuel cell system according to claim 1, wherein a first and a second ~~[printed]~~ printed circuit board carrier ~~(substrate) in each case~~ is selected, ~~with~~ each comprising an upper side and a lower side, and ~~for both carriers (substrates) on the upper side in each case~~ on the upper side of both carriers the steps of:

- depositing the metallisation onto the ~~[printed]~~ printed circuit board carrier ~~(substrate)~~ so that a ~~[printed]~~ printed circuit board arises, wherein metal films or thin sheets ~~from a selection of the materials~~ of a material selected from a group consisting of copper, nickel, gold, titanium or stainless steel and/or an alloy ~~of these~~ thereof is laminated onto the ~~[printed]~~ printed circuit board material, or the metallisation is realised by way of coating ~~(sputtering, vapor deposition)~~ and a subsequent galvanic reinforcement of the layer;
- selective etching-away or milling of the metallisation so that strip conductors arise which in ~~the~~ a reaction region form current collectors and connecting lugs, which ~~in each case~~ border ~~these~~ the current collectors in a smooth manner;
- incorporating ~~the~~ gas distribution structures into the ~~[printed]~~ printed circuit board;
- depositing ~~the~~ a diffusion ~~layers~~ layer;

are carried out and subsequently the membrane-electrode-assembly (MEA) is deposited onto the upper side of the first ~~[printed]~~ printed circuit board, the first and the second ~~[printed]~~ printed circuit board with their upper sides facing one

another are joined together and the connecting lugs are connected to one another in a perpendicular manner.

20. (Currently amended) A method according to claim 19, wherein as a membrane electrode assembly (MEA) an MEA catalytically coated over ~~the~~ its whole surface is selected and is segmented before deposition onto the first ~~[printed]~~ printed circuit board.

21. (Previously presented) A method according to claim 20, wherein the segmentation of the MEA is incorporated by way of laser ablation and/or reactive ion etching.

22. (Currently amended) A method according to claim 19, wherein after the incorporation of the gas distribution structures, a raised part surrounding the reaction ~~spaces~~ regions of the first and second printed circuit board is deposited so that in each case a recess arises in the region of the reaction ~~spaces~~ regions.